RV-M7-UC

M7 UHF Band
½ - 5 watt Data Radio

The M7 UHF data transceiver is a rugged 5 Watt UHF data radio modem with RS-232 (or optional 422/485) serial interface, ideal for SCADA and telemetry applications.

Product Overview

Long-Range Operation

Operating in the UHF 450-470MHz frequency band, the RV-M7 radio modem works over 50 miles point-to-point and many miles with omni-directional antennas. All RV-M7 modems support store-and-forward repeating for wide-area coverage.

Fast Polling

The M7 transceiver has a 3mS PLL in it, making it one of the fastest telemetry radios available, especially well suited for polled, DNP and MODBUS applications.

High Speed and High Efficiency

The *RV-M7* operates with user-selectable over-the air data rates of 1200 to 19200bps. Faster rates for higher efficiency or lower-speed for increased communication range. Its fast-switching radio enables it to send up to 50 transmissions per second.

Very Low Power Consumption

The advanced UHF transceiver is integrated with a powerful 16-bit microprocessor-based modem in one easy-to mount package. It has very low power consumption, and sleep modes that allow it to be active and consume almost no power at all.

Fully Programmable

It is configured with a serial connection using industry-standard AT commands. Parameters such as network IDs, unit ID and transmission rate are easily configured. Raveon also provides a PC program called "*Radio Manager*" that makes configuring the M7 fast and easy.

OTA Configuration

The ID of a particular transponder and certain system parameters such as report rate may be configured Over-The-Air, without having to physically connect to the unit.

Real-time diagnostics and statistics

Channel performance, RSSI, RF power, packet counters, and radio configuration are easily accessed via the serial port or remotely over-the-air. An *Auto-Status* feature enables the RV-M7 to periodically report its status and DC voltage.

Rugged and Weather Proof Options

The RV-M7 is available with optional 'weather proof' IP65 (NEMA 4) rated connections and enclosure. All models include protection against damage from over-temperature, high VSWR, and reverse voltage.

Flexible Addressing and Error Correction

The RV-M7 uses a 16 bit address with a 16 bit network mask, allowing for many devices to be co-located without receiving each other, as well as the creation of sophisticated network topologies.

GPS Option

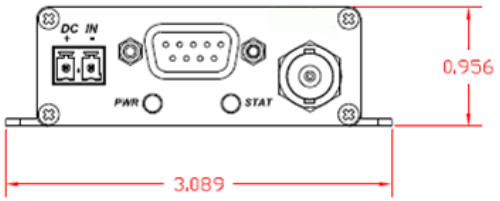
The optional internal GPS allows the RV-M7 to be a powerful Automatic Vehicle Locating (AVL) system or Time Space Position Information (TSPI) reporting device.

For More Information

For more information about this or any other Raveon product, call in the U.S.A. 1-760-444-5995 or visit www.raveon.com.

General Specifications

Size:
4.60" X 2.60" X .956 (11.7cm X 6.6cm X 2.43cm)



Weight:
6 oz
Input Voltage:
9.5 – 16 VDC
Current draw:
Receiving data: <90mA,
Transmitting data:
(2.7A @ 5w, 1.2A @ 2W typical)
Sleep (<25mA)
Standard Frequency Band:
C 450-480MHz
Optional Frequency Bands
A *403-434*MHz
B *419-440*MHz
D 470-512MHz
Serial Port Baud Rates (programmable)
1.2k, 2.4k, 4.8k, 9.6k, 19.2k, 38.4k, 57.6k, 115.2k
Over-the-air baud rates (programmable)
-N 1200, 2000, 2400, 4.8k, 5142, 8K,9.6k
-W 1200, 2000, 2400, 4.8k, 8k, 9.6k, 19.2k
Operating Mode
Simplex or Half-duplex
Full Spec Operating Temperature range
-30°C to +60°C
TX-RX and RX-TX turn-around time
<3mS
Wake-up time
<500mS from OFF
<5mS from Sleep
Front Panel LEDs
Power , Status (Carr Det, TX, mode…)
RF I/O Connector
BNC (Female)
Power Cable
Raveon P/N: RT-CB-H1
Addressing

Individual address:	65,536

Options:

Internal GPS	-GX option
Waterproof Enclosure	-WX option
RS422/485 option	-4 option

Transmitter Specifications

RF Power Output	*500mW – 5.0 W programmable*
Maximum Duty Cycle	*100% @ 2W to 40C, 25% @5W (100% w/ optional heat-sink)*
Frequency Deviation	*± 2.2kHz (-N) ± 3.5kHz (-W)*
RF Bandwidth	20MHz no-tune
Occupied bandwidth	*11 kHz (-N) 16kHz(-W)*
TX Spurious outputs	*< -70dBc*
Channel Spacing	*25KHz*
FCC Emissions Designator	*11K0F1D (-N)*
Frequency Stability	*Better than ±1.5ppm*

Receiver Specifications

RX sensitivity (.1% BER)	4800bps < -116dB
1200 & 2400baud	Contact Factory
RF No-tune bandwidth	20MHz
Adjacent Channel Selectivity	-50dB
Alternate Channel Selectivity	-65dB
Blocking and spurious rejection	-75dB
RX intermodulation rejection	-70dB

Interface Specifications

Serial Interface Port

Connector Type	DB-9
IO Voltage Levels	RS-232, RS-485, RS-422 (user selectable)
RX and TX data	Transparent Async
Word length	7 or 8 bits
Format	N, O, or E
Modem handshake signals	RTS, CTS, CD

AT Commands Overview

Channel Number and Operating Frequency
Carrier Detect Operation
Modem Statistics
Power-savings modes
Unit Address and Destination address
Network Address Mask
ARQ error correction on/off
Baud Rate, parity, stop bits
Select Packet or Streaming mode of data transmission
Store-and-forward Repeating configuration
Busy-channel lock-out
Hardware flow control operation
LEDs operation or disabled
Auto Status report on/off and interval.
Read DC voltage, current, forward RF power, VSWR
Remote PING

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